Response to Comments
Hanford 200-Area ETF:
Proposed Exclusion for Identification and Listing of Hazardous Waste,
69 FR 42395, July 25, 2005.

EPA received comments from the petitioner, the United States Department of Energy (DOE or Energy), and from an individual commentor. Energy's comments are divided between those that apply to the proposed delisting exclusion regulatory language, and those that apply to the proposed rule preamble discussion. Bracketed comments [text] are proposed additions by Energy. Bracketed comments with strikeout [~~text~~] are proposed deletions by Energy.

Department of Energy Regulatory Language Comments

Comment 1: EPA has not provided an explanation why a number of new conditions are being proposed.

There are a number of locations in the proposed rule preamble indicating that 200 Area Effluent Treatment Facility (ETF) has been performing as designed and that the original delisting conditions are working. Based on the ETF operating history and the delisting conditions performing as they were designed, DOE does not see a reason to substantially change the delisting conditions as EPA has suggested in this proposed rule. For examples of statements supporting this premise, on page 42399, EPA states: *The EPA believes that these data confirm that the 200 Area ETF is a robust treatment system well equipped to provide treatment necessary to meet delisting criteria for the wide range of new waste streams considered in this revised delisting action.* On page 42400, EPA states: *In analyzing the DOE–RL's current delisting petition, EPA does not believe that there is a substantial basis for choosing a different approach to evaluating the risks of delisting this waste or for establishing revised delisting criteria.* On the same page, EPA goes on to say: *Current 200 Area ETF processing technologies and configurations remain unchanged from the proposed design considered in EPA's original upfront delisting analysis. Further, the 200 Area ETF operating history confirms the treatment efficiencies and performance predicted by pilot plant testing and considered by EPA in the original delisting analysis. Therefore, we do not find any basis for alternate evaluation methodologies based on the treatment capabilities of the 200 Area ETF.* As another example showing how there appears little or no reason to change the existing delisting conditions, EPA states on page 42400: *Although today's proposal considers additional chemical compounds that might be present in F039 multisource leachate from wastes other than F001 through F005, EPA believes that these additional constituents can be analyzed effectively using the original methodology. Further, EPA does not believe that any of the additional constituents considered in this delisting proposal pose treatability or risk questions that suggest the original chemical group approach to analyzing delisting risks and establishing delisting levels needs to be re-evaluated.* Going on to page 424101, EPA states: *To date, the DOE–RL has not reported any exceedences of any of the three monitoring criterion established by the ST4500 Permit. Given that all of these ST4500 Permit wastewater discharge limits are at or below*

corresponding delisting levels, EPA concludes that the 200 Area ETF performs at least as well as the proposed delisting levels. … This conclusion supports EPA's belief that 200 Area ETF processing model is well validated, and can be appropriately used to predict performance of 200 Area ETF for treatment of new waste streams for which actually operating data is not yet available. On the other hand, a reader can not find any statements in the preamble which would support the need to more stringent conditions as EPA has proposed. Therefore, DOE requests that the proposed conditions are revised consistent with the rest of the comments submitted in this package.

Response:

EPA disagrees with the premise of this comment. As clearly stated in Section I.A of the preamble to the proposed exclusion, the basis of the exclusion proposal is Energy's request to expand the quantity of wastes excluded, and to expand the suite of listed waste numbers for which treated effluent is excluded from hazardous waste regulation. In developing the proposed exclusion conditions based on Energy's petition and other information in the rulemaking docket, EPA considered two key issues. The first of these issues is what methodology should be used to evaluate the risks of treated effluent and to establish delisting exclusions limits. As explained in Section III.C of the preamble to the proposed exclusion, EPA found that the treatability group approach to evaluating risks of treated effluent and to establishing delisting exclusion limits remains appropriate and defensible, and should continue to be used as the basis for the revised delisting exclusion limits. In this instance, EPA's evaluation of the operating history of the 200-Area ETF justifies retention of the treatability group approach to risk evaluation.

The second of the two key issues relates to the significantly expanded suite of both hazardous waste numbers and waste streams managed by the 200-Area ETF that are considered under the proposed exclusion. In its analysis of the original 1995 exclusion, EPA considered only a single waste stream, process condensate from the 242-A Evaporator, in its evaluation of the 200-Area ETF. Central to this analysis was a detailed physical and chemical characterization of process condensate, and extensive pilot plant testing of surrogate (that is, non-radioactive) process condensate. From this rather extensive data base, Energy established engineering and process operating envelopes for the 200-Area ETF specific to 242-A process condensate. These envelopes, in turn provided the basis for EPA's initial finding that the 200-Area ETF could successfully treat process condensate to health-based delisting exclusion limits, and that treated effluent derived from process condensate was an acceptable candidate for a delisting exclusion. EPA confirms its finding in the proposed rule preamble that both the 200-Area ETF and the corresponding model based on treatability envelopes both have functioned successfully.

Regardless of the degree of confidence EPA may have in performance of the 200-Area ETF based on initial pilot plant testing or operational history, any such treatment system has finite operating limits. In fact, each of the key unit operations (UV/OX, reverse osmosis, and ion exchange) in the 200-Area ETF treatment train has well-understood operating limits based on engineering and/or chemical kinetic principles. For the original

200-Area ETF delisting, EPA was able to evaluate these limits through direct surrogate waste characterization and pilot plant testing of the treatment system. Indeed, EPA could have approached Energy's request to expand the suite of hazardous waste numbers and waste streams covered by the revised exclusion by requiring explicit physical and analytical chemical characterization of each waste stream other than wastewaters derived from such waste streams, and by requiring demonstration testing in the 200-Area ETF prior to excluding process condensate derived from treatment of such new waste streams. Clearly, this approach would place an enormous burden on Energy, and impose a substantial administrative burden by requiring frequent rulemaking revisions to the 200-ETF exclusion. EPA acknowledges that such a direct demonstration approach would be difficult to implement, and probably impede rather than advance the ability of the 200-Area ETF to support Hanford cleanup activities.

These considerations not withstanding, any expansion of the 200-Area ETF exclusion as requested by Energy must be supported by data and/or analysis that demonstrates ability to comply with exclusion limits to the same degree of confidence that would result from a direct demonstration approach. EPA proposed an alternative approach, which we refer to as the engineering evaluation approach, which is intended to avoid the impractical aspects of a direct demonstration approach yet still provide the required degree of confidence to comply with exclusion conditions. Given the impractical nature of a direct demonstration approach to addressing the expanded suite of waste codes requested by Energy to be included in the delisting, the exclusion conditions which implement the proposed engineering evaluation/verification approach are not only justified, but absolutely required as the basis for a legitimate exclusion. EPA has provided a detailed explanation of the revised exclusion framework and justification for the associated exclusion conditions in Section III of the proposed rule. Any implication in Energy's comments that the operating history of the 200-Area ETF alone justifies acceptance of a wide range of new waste streams and hazardous waste numbers absent the conditions necessary to implement an engineering evaluation approach is simply not supportable. EPA further notes that the engineering evaluation approach that underlies the 200-Area ETF exclusion proposal would not even have been considered if there were there any doubt concerning the robustness of the treatment system, or the ability of the engineering model to reliably predict the performance of the 200-Area ETF.

Other changes resulting in additional exclusion conditions, such as Condition 4, are the result of policy changes in the delisting program subsequent to promulgation of the original 200-Area ETF delisting rulemaking. See, for example, "National Policy for Hazardous Waste Delistings," 07/01/1998, RCRA Online Number 14282, available at http://www.epa.gov/rcraonline. The transmittal memorandum for this policy document notes in particular:

> "The purpose of this memorandum is to transmit to you a national policy for the hazardous waste delisting program. It covers two important elements. First, the policy contains a "conditional delisting" element, designed to ensure that delisted waste are managed in a manner consistent with the risk evaluation that supports the delisting decision. Second, the policy provides a delisting "reopener"

element, designed to provide the Agency with a mechanism for immediate response to new information or data indicating conditions exist that may alter the Agency's position on the approval of a delisting."

The policy itself states:

> "In light of a recent experience that required the Agency to repeal an existing delisting, we recommend that the Regions include in future delistings, a provision that establishes a mechanism to review the delisting when additional data becomes available indicating the initial delisting decision was inappropriate or wrong. […] Therefore, Regions should include the following or similar language in future delisting decision, unless there are clear rationales not to[….]"

With regard to the 200-Area ETF delisting, EPA finds both that the recommended language is appropriate, and that there are no clear rationales not to include such language.76

No changes are warranted based on this comment.

Comment 2: Change the reference from DOE-RL to DOE in the final rule.

At the Hanford Site, there are now three DOE field offices overseeing various contractors. In order to prevent any problems in the future concerning which field office will oversee the ETF, the 40 CFR 261 Appendix IX, Table 2 should refer to the Facility as "*Department of Energy (DOE), Richland, Washington.*" Reference to a particular field office in the final rule should be avoided.

Response:

Comment accepted. EPA, however, will assume communications related to this exclusion will be addressed to the Department of Energy, Richland Operations Office.

Comment 3: Add other "F" codes to the list of waste codes under this exclusion.

Since EPA has added the U/P codes DOE identified in the November 2001 delisting petition contained in Appendix B, Table B-1, EPA should add the other "F" codes identified in Table B-1 to the final rule. The scope of the delisting should include all F-listed wastes in addition to the U/P listed wastes meeting the criteria specified in the draft rule. Excluding the nineteen F-listed wastes which were included in the delisting petition (F006-12, F019-28, F034, F037) will deny Hanford the treatment capacity for wastewaters that could be generated (those sources identified in the delisting petition, Section 3.3). There should be no impact or additional evaluation needed by EPA.

Response:

EPA agrees in part and disagrees in part with this comment. This comment requests consideration of nineteen F-codes, specifically F006-012, F019-28, F034, and F037. The F006-F012 waste numbers apply to wastes from various electroplating and cyanide metal plating operations, and the F019 waste number from chemical conversion coating of aluminum. Although the comment states that these sources have been identified in Section 3.3 of the November 29, 2001 delisting petition, EPA's reading of the petition does not support this conclusion. Never the less, EPA does not disagree with Energy's comment to include these waste numbers among those for which treated effluent from the 200-Area ETF will be excluded under a final exclusion rule. The basis for this change is that it is not unreasonable that eventual Hanford cleanup may result in management of such wastes, given the historical activities associated with weapons production, and that the analysis of the 200-Area ETF performance specifically includes the various metals and cyanides associated with these waste numbers. EPA is therefore expanding the list of hazardous waste numbers for which treated effluent may be excluded to include waste numbers F006-F012 and F019. EPA is, however, limiting ETF acceptance of such wastes to wastewater forms only, given that ETF is clearly not designed or capable of managing sludges or other solids-containing waste streams.

Waste numbers F020-F026 all relate to various wastes from production of various chlorinated phenols or aliphatics. None of these activities were ever conducted as part of nuclear weapons production, so there is no basis to expect that the 200-Area ETF would ever manage wastes bearing these waste numbers. EPA concludes that Energy has not provided adequate information that these waste numbers are reasonably associated with wastewaters expected to be managed at the 200-Area ETF, and is not including F020 through F026 in the list of hazardous waste numbers for which treated effluent is excluded.

F027 relates to discarded, unused formulations containing various chlorinated phenols. Considering the lengthy period of time over which Hanford has operated, it is not unreasonable that Hanford or other Energy weapons complex cleanup may generate wastes bearing this waste number. Further, the analysis of 200-Area ETF performance supporting the proposed exclusion specifically considers the constituents associated with F027 wastes. Therefore, EPA is including F027 in the list of hazardous waste numbers for which 200-Area ETF treated effluent is excluded. To ensure treatability of wastes bearing the F027 waste number, EPA is limiting the exclusion to treated effluents resulting from treatment of F027 wastewaters. EPA does not believe that unused formulations of chlorinated phenols, typically based diesel or other hydrocarbon solutions of chlorinated phenols, are amenable themselves to treatment in ETF, at least absent significant dilution.

F028 relates to residues resulting from incineration or thermal treatment of soils containing F020-F026. Given that the Hanford facility is neither currently nor expected to conduct such waste management operations, EPA concludes that Energy has not has not provided adequate information that these waste numbers are reasonably associated with wastewaters expected to be managed at the 200-Area ETF, and is not including F028 in the list of hazardous waste numbers for which treated effluent is excluded.

F034 and F037 deal with wood treating drip pads and petroleum refining wastes. For the same reasons noted above in connection with F020-F026 hazardous waste numbers, EPA concludes that Energy has not provided adequate information that these waste numbers are reasonably associated with wastewaters expected to be managed at the 200-Area ETF, and is not including either in the list of hazardous waste numbers for which treated effluent is excluded.

Comment 4: Revise the definition of waste stream to delete reference to the Hanford Facility RCRA permit.

DOE proposes that the waste stream definition under condition (1)(d)(i) should be revised to read: *"A waste stream is defined as [~~all~~] wastewater received by the 200 Area ETF that meet[s] the 200 Area ETF waste acceptance criteria [~~as defined by the Hanford Facility RCRA Permit, WA7 89000 8967~~]and [is][~~are~~] managed under the same 200 Area ETF waste processing strategy*." The word "all" is suggested for deletion because it improves the clarity of the definition. Use of the word all is vague and ambiguous based on how the Liquid Effluent Retention Facility (LERF) basins operate and how wastewaters can be accepted into the ETF. Secondly, based on proposed condition (1)(a)(i) which reads, "*waste stream characterization may be carried out in whole or in part using the waste analysis procedures in the Hanford Facility RCRA Permit…*," it is optional for DOE to perform waste acceptance according to only the provisions of the Hanford Facility RCRA Permit. This optional approach is appropriate given the current operating history of ETF, the fact that no such similar condition currently exists in 40 CFR 261 Appendix IX Table 2, and ETF's operating history does not warrant any changes. Finally, DOE does not see a compelling reason to tie in the Hanford Facility RCRA Permit to the delisting. See comment 9 below. Accordingly, the definition of waste stream needs to be revised to be consistent with proposed condition (1)(a)(i).

Response:

There are two elements to this comment. First, the comment proposes removal of the first "all," on the basis that it is vague and ambiguous based on how the Liquid Effluent Retention Facility (LERF) basins operate and how wastewaters can be accepted into the ETF. EPA disagrees – the word "all" is very clear and unambiguous with respect to what wastes are included in a waste stream. Removal of the word "all" would leave open the question of whether just some or all wastes meeting the specified criteria are included in the definition for purposes of the 200-Area ETF exclusion. No change is made regarding this element of the comment.

Second, the comment proposes deletion of the reference to the Hanford Facility RCRA permit from the definition of a waste stream. This deletion would make it entirely ambiguous what waste acceptance criteria are referenced – the choice of waste acceptance criteria by Energy could then be entirely arbitrary. A fundamental premise of the preventative aspect of RCRA is an assurance of safe waste management is required prior actual treatment, storage or disposal of hazardous waste. In this particular instance,

waste acceptance criteria ensure that the wastes are compatible with and amenable to treatment in the 200-Area ETF. A key element of demonstrating such assurance is a set of acceptance criteria established to ensure safe waste management. EPA believes that reference to a potentially arbitrary waste set of acceptance criteria, particularly a set of criteria potentially devoid of any regulatory input or oversight, is inappropriate in a regulatory definition. EPA concludes the reference to the Hanford Facility RCRA permit is an appropriate means to address this question of specificity, and is reasonable in its burden to Energy. EPA is therefore retaining the reference to the Hanford Facility RCRA permit.

EPA notes that the decision criteria for waste acceptance under the facility's operating permit and under conditions of an exclusion rule are distinct, albeit with substantial overlap. Both are necessary and must be complied with. EPA further notes that it makes little sense to isolate the respective decision criteria to such an extent that there is a potential for inconsistency or conflict. Of particular concern to EPA is to ensure not only that the treatment of wastewaters in the 200-Area ETF will meet concentration-based exclusion limits, but is also otherwise amenable to treatment in the ETF facility. In this context, EPA proposed inclusion of the reference to Hanford Facility RCRA permit in the proposed exclusion definition of a waste stream. EPA's intent in adopting this approach was to acknowledge the regulatory applicability of and need for the permit waste acceptance criteria in a way that ensures full integration with delisting conditions with minimal impact or burden to the facility.

In considering this comments response, EPA recognized that a reference to the Hanford permit 200-Area ETF Waste Analysis Plan would be more appropriate than a reference to the 200-Area ETF waste acceptance criteria. The Waste Analysis Plan is actually a broader set of requirement than waste acceptance criteria, including but not limited to the waste acceptance criteria originally cited. Therefore, that this change is entirely consistent with EPA's intent expressed above of ensuring safe waste management. The exclusion condition (d)(j) is therefore modified to read:

(d)…(i) A waste stream is defined as all wastewaters received by the 200 Area ETF that meet requirements of the 200 Area ETF Waste Analysis Plan as defined by the Hanford Facility RCRA permit…."

Comment 5: Revise the definition of waste processing strategy to delete reference to recording treated effluent conductivity.

DOE proposes that the second sentence of the waste processing strategy definition under condition (1)(d)(ii) should be revised to read: *"Each processing strategy shall require monitoring [~~and recording~~] of treated effluent conductivity for purposes of Condition (2)(b)(i)(E), and for monitoring [~~and recording~~] of primary operating parameters as necessary to demonstrate that 200 Area ETF operations are in accordance with the associated waste processing strategy."* Conductivity and other operating parameters are monitored continuously by in-line instrumentation. The data are recorded for a period of time necessary to troubleshoot operations, as necessary, and is then deleted. EPA's

proposed condition of recording conductivity in this manner is not useful, would be an added operational burden with no added benefit, and should not be a condition under this delisting petition. The set operating parameters are documented in the processing strategy documentation and the verification sampling is used to officially validate the processing strategy. The processing strategy documentation and the verification sampling should continue to be the elements under this final rule used to demonstrate compliance as described by EPA on page 42406 in section III.G.

Response:

Monitoring of treated effluent conductivity provides an important early-warning measure of performance of the reverse osmosis unit operation. Any failure or reduction in performance of the reverse osmosis system would result in an increase in ionic salts in the treated effluent, easily detected through conductivity measurement. Monitoring of treated effluent conductivity provides an important indicator that the 200-Area ETF is operating according to the applicable waste treatment strategy, and that treated effluent is likely to continue to meet exclusion criteria between initial and periodic verification sampling. This is particularly important considering verification sampling of treated effluent was proposed to occur only every fifteenth verification tankfull, compared to the original frequency of every ten tankfulls. Given the technical significance of conductivity measurements, EPA has determined that recording of these data are essential to allow for verification of 200-Area ETF performance and compliance with exclusion conditions.

EPA also notes the requirement of exclusion condition 2(b)(e), which requires verification sampling whenever a factor of 10 increase in treated effluent conductivity occurs. Recording of treated effluent conductivity in addition to measurement is an essential element in EPA's ability to confirm compliance with this exclusion condition. EPA has given Energy the flexibility in condition (1)(d)(ii) to define in the waste processing strategy required by condition (1)(a)(ii) the measurement and recording frequency necessary to demonstrate that 200-Area ETF operations are in accordance with the associated waste processing strategy.

Therefore, EPA strongly disagrees with DOE's contention that recording of treated effluent conductivity is not useful or has no added benefit. EPA further concludes that the requirement to record, not merely measure, treated effluent conductivity is a necessary element of documenting the performance of the 200-Area ETF and compliance with delisting exclusion limits. EPA is retaining this requirement.

Comment 6: Revise the definition of key unit operations to delete reference to secondary waste treatment.

DOE proposes that the key unit operations definition under proposed condition (1)(d)(iv) should be revised to read: "*Key unit operations are defined as filtration, UV/OX, reverse osmosis, [and] ion exchange[~~, and secondary waste treatment~~]*." This change will make the proposed condition consistent with the proposed scope since the proposed delisting

only addresses treated effluents. The secondary waste treatment unit operations should be deleted because it is not a key unit operation in delisting the treated effluents. It is only a key operation for the concentrated waste (see November 2001 delisting petition, Section 2.1, and Figure 2-2).

Response:

EPA disagrees with this comment, specifically on the basis of the second bullet item in Section 2.3 of the November 29, 2001 delisting petition. This section states "The flexibility of the ETF also allows for some influents to be processed first in the secondary treatment train." Therefore, for some processing configurations, the secondary treatment train has the potential to directly influence treated effluent quality and whether or not it meets delisting exclusion criteria. EPA is retaining secondary treatment train as a key unit operation.

In considering this comment response, EPA noted that the phrase "secondary waste treatment" was used in the proposed rule instead of the phrase "secondary treatment train" used in the November 29, 2001 delisting petition. See, for example, Figure 2-2 of the petition. For purposes of clarity and consistency with the petition, EPA is replacing "secondary waste treatment" with "secondary treatment train."

Comment 7: Revise proposed condition (3)(a) to delete reference to disposal at the State Authorized Land Disposal Site (SALDS) and proposed condition 7.

DOE proposes that condition (3)(a) should be revised to read: *"If the levels of hazardous constituents in the samples of 200 Area ETF effluent are equal to or below the levels set forth in Condition (5), the 200 Area ETF effluents are not listed as hazardous wastes [~~provided they are disposed of in the State Authorized Land Disposal Site (SALDS) (except as provided pursuant to Condition (7))~~], according to applicable requirements and permits. Subsequent treated effluent batches shall be subject to verification requirements of Condition (2)(c).*" The SALDS disposal location is not a condition of the current delisting conditions, and there are no compelling reasons for EPA to now include the disposal location as a condition. The authority given to EPA through 40 CFR 260.22 should not extend into the state-only program of soil column discharges because DOE complies with these requirements as a matter of comity. In the preamble on page 42403, EPA states: "*To ensure treated effluent is not managed in a manner that might create environmental exposures, the EPA is proposing to limit management of treated effluent to the SALDS disposal unit.*" DOE does not understand why this statement is made regarding environmental exposures since the treated effluent is essentially demineralized water. The fact that the treated effluent contains the radionuclide tritium should not be not [sic] a concern of the delisting petition. The tritium is properly addressed under the Tri-Party Agreement M-026 milestone and radionuclides are the responsibility of the DOE to properly manage. Furthermore, a condition addressing the disposal location as SALDS is not necessary given the operating history of ETF and the data EPA has examined concerning the SALDS disposal location. If EPA has a concern about the disposal location of the treated effluent, DOE requests that this topic be discussed and the

appropriate delisting condition (3)(a) language agreed upon. Finally, see comment 11 below relating to condition 7.

Response:

EPA disagrees with this comment. First, the fact that disposal of treated effluent at the SALDS disposal location[1] is not a condition of the existing 200-Area ETF exclusion is not relevant to EPA's ability to impose such a condition where such justification otherwise exists. As stated in the proposed rule preamble, EPA in fact has presented a defensible justification for requiring this condition. EPA's justification for this condition has nothing to do with state-only regulation of the SALDS unit, or that treated effluent contains tritium subject to DOE management responsibility. Rather, as stated in the proposed rule preamble in Section III.C, EPA has not conducted an analysis of the risks of treated effluent at the delisting exclusion limits for any exposure pathway other than groundwater ingestion. EPA finds it necessary to include restrictive conditions to ensure disposal or reuse practices do not occur for which EPA has not established a record demonstrating protectiveness. EPA further notes that while normal operation of the 200-Area ETF results in treated effluent quality substantially superior to delisting exclusion limits, EPA must consider risks of treated effluent at the maximum contaminant concentrations allowed by the exclusion limits. Although EPA has determined that treated effluent at the delisting exclusion limits is protective of human health and the environment with respect to exposures through a groundwater ingestion pathway, EPA would not characterize treated effluent at these limits as merely de-mineralized water. For these reasons, EPA is retaining the disposal condition related to SALDS.

Comment 8: Revise proposed condition (4)(a) to delete reference to groundwater monitoring data and change the data discussion to reflect confirmed data.

DOE proposes that condition (4)(a) should be revised to read: *"If, anytime before, during, or after treatment of waste in the 200 Area ETF, DOE [confirms] ~~[possesses or is otherwise made aware of]~~ any data (including but not limited to [~~groundwater monitoring data, as well as~~] data concerning the accuracy of site conditions or the validity of assumptions upon which the November 29, 2001 petition was based) relevant to the delisted waste indicating that the treated effluent no longer meets delisting criteria (excluding recordkeeping and data submissions required by Condition (6)), [~~or that groundwater affected by discharge of the treated effluent exhibits hazardous constituent concentrations above health-based limits~~], DOE must report such data, [verbally]~~[in writing]~~, to the Regional Administrator within 10 days of [confirming such] [~~first possessing or being made aware of that~~] data [exists]."* The discussions between DOE and EPA over the years with ETF delisting have not produced a topic concerning monitoring the groundwater for health based parameters. Without additional knowledge about why EPA is concerned about health based standards in groundwater, DOE has to consider this condition a new impact to ETF operations and/or the DOE groundwater monitoring program. DOE views our proposed condition revision without the

[1] A brief description of the SALDS disposal unit can be found in footnote 3 on page 42397 of the proposed exclusion, 69 Federal Register (FR) 42395.

groundwater data language as properly addressing any re-opener concerns by EPA by using the phrase "…accuracy of site conditions of the validity of assumptions…". Without additional discussions with EPA, DOE views this condition as being vague and ambiguous and too open ended regarding how far the delisting petition will reach into the Hanford groundwater monitoring program. If EPA wishes to retain any form of the groundwater monitoring data language in the final condition, DOE requests that additional discussions on the topic take place in order to understand EPA's concerns. Secondly, the reporting period of 10-days should be achievable if the reporting methodology is via verbal notification and DOE is allowed to confirm the data to some degree after first possessing or being made aware of the data. ETF operations personnel must be given time to confirm data presented to them in order to prevent unnecessary time and expenditure on matters which should never have been reported. In addition, 10 days will allow DOE and the ETF contractor the ability to formulate appropriate recommendations on how to resoled[sic] the issue.

Response:

As clearly outlined in the proposed rule preamble and in the original 200-Area ETF exclusion, risks of excluded wastes are evaluated only on the basis of a groundwater exposure pathway. EPA has found that the engineering/verification model upon which the proposed exclusion is based to be a robust means of ensuring delisting exclusion limits are met for all treated effluent, not just those wastes represented by initial and subsequent verification sampling. Just as EPA finds it appropriate to require analytical verification of 200-Area ETF performance to confirm engineering model predictions, EPA also finds it appropriate to require submission of groundwater data which bear a reasonable nexus to confirming the groundwater modeling predictions upon which the original and proposed revised exclusions are based. Given the central role groundwater has in EPA's evaluation of the risks of excluded treated effluent, a data submission requirement focused specifically on groundwater is entirely reasonable.

To respond more specifically to DOE's comments, EPA makes the following observations. First, the fact that "The discussions between DOE and EPA over the years with ETF delisting have not produced a topic concerning monitoring the groundwater for health based parameters." is not relevant to EPA's finding and supporting rationale for the groundwater data submission requirement. Indeed, in the record and preamble language supporting the proposed exclusion rulemaking, EPA specifically considered questions related to groundwater quality at SALDS. EPA in particular notes that the state discharge permit ST4500 requires groundwater monitoring, and that these data were explicitly considered in the proposed rulemaking, clearly documenting EPA's interest in monitoring the groundwater for health-based parameters..

Second, EPA notes that it is not imposing any new monitoring requirement – merely a requirement to report to EPA data already in DOE's possession, with particular care taken to insure the reporting requirement is clearly relevant to EPA's exclusion decision and potential bases for revisiting the decision. DOE's comment suggests that the data submission requirement is a new impact to ETF operations and/or the DOE groundwater

monitoring program, and that the condition is vague and ambiguous and too open ended regarding how far the delisting petition will reach into the Hanford groundwater monitoring program. EPA disagrees with both of these assertions - submission of data already required by permit to be obtained should not have a significant impact on ETF operations and/or the DOE groundwater monitoring program. The condition is quite explicit as to the decision criteria DOE is expected to apply when deciding whether or not a particular piece of groundwater data is subject to the submission requirement.

Third, DOE suggests that a reporting period of ten (10) days for written notification is insufficient in that it does not allow DOE adequate time to confirm the data, nor to formulate recommendations on how to resolve the issue. To be sure, EPA both expects and welcomes actions on the part of DOE to confirm data and to independently develop plans to resolve issues of non-compliance. That said, however, EPA does not believe it at all appropriate to limit its own ability as a regulatory agency to perform exactly these functions simply to allow a regulated facility to perform such tasks in advance of EPA. The data submission requirement does not impose any obligation to propose corrective actions, or other actions that would legitimately require additional time to develop on the part of DOE. DOE also suggests that data must be "confirmed" prior to submission to EPA. EPA disagrees with this rationale on two grounds. First, the term "confirm" is quite ambiguous in this context, and application of an ambiguous term as a prerequisite to providing data to EPA does little to provide confidence that EPA will receive relevant data in a timely manner. Second, it is ultimately EPA's responsibility to determine whether any particular groundwater data submission is unnecessary or not. EPA is unwilling to defer its own evaluation of whether data should or should not be submitted, particularly considering the explicit and narrow scope of data that are required to be submitted under this condition. Therefore, EPA believes the 10-day requirement for written notification is not unreasonable, and is retaining it.

Comment 9: Revise proposed condition (4)(b) to reflect the ETF unit operations of concern, and not RCRA permitting activities.

DOE proposes condition (4)(b) should be revised to read: "*DOE shall provide written notification to the Regional Administrator [~~no less than 180 days~~] prior to [~~any~~] planned or proposed [changes to the key unit operations that could affect the waste processing strategy or primary operating parameters at] [~~substantial modifications to~~] the 200 Area ETF, [~~exclusive of routine maintenance activities. This condition shall specifically include, but not be limited to, changes that do or would require Class II and III modification to the Hanford Facility RCRA Permit WA7 89000 8967 (in the case of permittee-initiated modifications) or equivalent modifications in the case of agency-initiated permit modifications. DOE-RL may request a modification to the 180-day notification requirement of this condition in the instance of agency-initiated permit modifications for purposes of ensuring coordination with permitting activities.~~]* DOE does not agree with EPA's proposed association between delisting requirements and RCRA permitting of the ETF. The current delisting petition has no connection between the two sets of requirements and DOE sees no compelling reason to start connecting the two sets of requirements now. DOE's proposal is tied to the substantive elements of unit

operations contained in the delisting petition and should be the basis EPA uses to potentially re-open the delisting petition. Furthermore, DOE understands it's obligation to comply with the final delisting and with the Hanford Facility RCRA Permit. To date, DOE has filed various Class 2 and Class 3 permit modifications for the ETF. Many, if not all of these permit modifications have dealt with issues not affecting the substantive aspects of the three unit operations proposed as key unit operations. For example, changes to the training plan, contingency plan, or inspection schedule might be classified as Class 2 or Class 3 modification to the RCRA permit, but they have no effect on the delisting. If EPA is concerned about timing issues between delisting modification and management of the Hanford Facility RCRA Permit, DOE's experience has shown otherwise. A Hanford Facility RCRA Permit modification usually takes a maximum of one-year to accomplish. A delisting petition modification, on the other hand, has shown to take well over 5-years. From the DOE standpoint, compliance must be maintained with both sets of requirements and coordination between the two sets of requirements is not automatically needed. As another factor in managing the two sets of requirements, EPA must budget specifically for delisting modifications, where as the State of Washington maintains a budget to process permit modifications as they arise. DOE sees the value of the condition improved by making the language of this re-opener condition consistent with the terminology defined in condition (1)(d) and avoiding tying the two sets of requirements together.

Response:

EPA accepts in part this comment. DOE has misread both the specifics and intent of this condition. First, the "association" between the delisting rule and the Hanford Facility RCRA permit (more specifically, the permit modification requirements of Washington Administrative Code [WAC] 173-303-830) is to provide a clear definition of the significance threshold for changes to the 200-Area ETF of which EPA expects to receive notification. Indeed, DOE's own proposed language ("*prior to planned or proposed changes to the key unit operations that could affect the waste processing strategy or primary operating parameters")* embodies exactly the ambiguity that EPA sought to address by defining the level of significance as those changes that would require Class II or III (or equivalent agency-initiated modifications). If anything, EPA's proposed language would require fewer notifications to EPA than under DOE's proposed alternative language. EPA does agree that focusing notification on changes that could affect the waste processing strategy or primary operating parameters is legitimate, and agrees to adding clarifying language.

EPA's concern with timing is solely that it receives sufficient advance notification of proposed changes to make a determination prior to the changes whether any modification to the delisting exclusion might be necessary or appropriate. EPA's inclusion of the option to modify the 180-day notification period is to be as flexible as possible.

Comment 10: As an editorial and formatting comment, change the number of condition (D) to (5) and reformat the delisting levels into a list as opposed to a paragraph.

DOE considers the delisting levels more easily readable in a list format. The condition appears to be incorrectly numbered.

Response:

Comment accepted. The error noted was an inadvertent typographical error that occurred during Federal Register publication. Unfortunately, formatting of Federal Register publications is under the purview of the Office of Federal Register, not EPA.

Comment 11: Delete proposed condition (7).

The proposed condition reads: "*Treated Effluent Disposal Requirements. DOE–RL may at any time propose alternate reuse practices for treated effluent managed under terms of this exclusion in lieu of disposal at the SALDS. Such proposals must be in writing to the Regional Administrator, and demonstrate that the risks and potential human health or environmental exposures from alternate treated effluent disposal or reuse practices do not warrant retaining the waste as a hazardous waste. Upon written approval by EPA of such a proposal, non-hazardous treated effluents may be managed according to the proposed alternate practices in lieu of the SALDS disposal requirement in paragraph (3)(a). The effect of such approved proposals shall be explicitly limited to approving alternate disposal practices in lieu of the requirements in paragraph (3)(a) to dispose of treated effluent in SALDS.*" DOE is having a difficult time understanding what concerns EPA might have regarding non-radiological parameters that would cause a need for this proposed condition. Based on the following facts, DOE does not believe a condition is warranted for the reuse of the delisted treated effluent: (1) the robust nature of the ETF operating history has been demonstrated (page 42399); (2) the ETF treated effluent delisting action is sound and environmentally protective (page 42406); (3) the treatability envelopes, waste processing strategy, and primary operating parameters for the ETF have been proven time and time again since 1995; and (4) the delisted treated effluent is not a hazardous waste, is only considered a non-hazardous solid waste, and therefore is not subject to recycling and reuse requirements contained in 40 CFR 261.

DOE has already been identifying beneficial uses of delisted treated effluent from ETF. The following table identifies the current and potential future uses of delisted treated effluent from ETF. If EPA still believes they should retain a condition regarding reuse of treated effluents, DOE requests that this topic is discussed so that DOE can understand EPA's concern.

Beneficial Uses for ETF Delisted Treated Effluent	
Current Use	**Est. Volume (gal./year)**
Hydro testing tanks, tankers, piping, etc.	50,000
Makeup water for MTT purging & sanitizing solution	100,000
Makeup water for 4% acid and caustic	120,000
Purging, flushing, washing, & charging filters	50,000
Flushing, cleaning, & charging RO membranes	250,000
Regenerate & rinse IX columns	150,000
Flushing waste lines and instruments/sensors	50,000
Flushing pumps, vessels, and lines prior to maintenance	80,000
Lay-up solution for vessels & lines	30,000
Flushing thin film dryer, feed pipe, and spray condenser	35,000
Makeup water to evaporator/thin film dryer boilers	80,000
Sump uses (washdown/foam suppression/bearing cooling)	10,000
Tank flushing after RCRA campaigns	50,000
Evaporator flushing and layup	30,000
Flushing tanks prior to inspection	100,000
TOTAL	**>1,000,000**
Potential Future Uses Under Evaluation	
Seal water tank (currently use raw water)	40,000
IX Column replacement	50,000
Flushing LERF basins (per basin)	~500,000

Response:

EPA disagrees with this comment. As discussed in response to Comment 7, EPA has established a record demonstrating the protectiveness of treated effluent at the delisting exclusion limits only with respect to exposures through the groundwater pathway. Further, EPA explained that in the absence of a record demonstrating protectiveness of exposure pathways other than groundwater, EPA must limit disposal or discharge of treated effluents so as to ensure that exposure does not occur through pathways other than groundwater ingestion. The same rationale applies to proposed use/reuse of treated effluent. Since DOE did not propose possible reuse options as part of its petition, EPA has not had an opportunity to explicitly consider particular reuse scenarios, and whether they might pose risk or exposure scenarios that would warrant explicit consideration. Therefore, EPA is retaining the condition as proposed.

That said, EPA continues to encourage DOE to actively consider reuse options for treated effluent. Unfortunately, DOE's comment provides insufficient detail for EPA to definitively opine as to whether the enumerated current or potential future treated effluent reuse options would be acceptable under the reuse condition of the exclusion. However, it appears that each of the options involve use/reuse within the permitted confines of LERF/ETF, where EPA would expect that release prevention controls, response/contingency plans, worker training, safety programs and so on all would be in

place to ensure exposures warranting explicit risk consideration would not occur beyond the groundwater exposure pathway. EPA encourages DOE to provide additional detail of these various reuse options for EPA consideration under terms of the proposed exclusion condition.

As a final note, EPA disagrees with DOE's assertion in the fourth list item in the first paragraph of the comment ("the delisted treated effluent is not a hazardous waste, is only considered a non-hazardous solid waste, and therefore is not subject to recycling and reuse requirements contained in 40 CFR 261."). This is true only when DOE complies with all conditions of the delisting exclusion – absent EPA approval under the condition in question, treated effluent managed at other than SALDS has not complied with all conditions of the exclusion, and therefore is not an excluded from the definition of hazardous waste.

Department of Energy Preamble Language Comments

Comment A: As a general comment, EPA has not provided an explanation in the preamble language of the differences between DOE's petition submitted on November 2001 and the information presented by EPA in the proposed rule.

In DOE's delisting petition modification submitted in November 2001, information was submitted to describe the requested changes to the ETF delisting conditions and other topics related to the delisting. When someone reads the delisting petition submitted on November 2001 and then reads the proposed rule, the reader is left with two different beliefs as to what is actually covered and/or allowed by the revised delisting. As a result, the following DOE comments in this section articulate the topics where a difference in interpretation could be expected.

Response:

Comment noted. However, the comment appears to ignore the administrative record supporting this rulemaking, which documents the various supplemental submissions from Energy subsequent to the November 29, 2001 submission.

Comment B: EPA needs to ensure the final rule is perfectly clear on the sources of the waste subject to the delisting.

As the proposed rule preamble reads, it does not match with the sources of wastewaters described in Section 1.4, Section 2.2 and Section 3.0 of the delisting petition. In the delisting petition in Sections 1.4 and 3.1, DOE mentioned that waste generated both on the Hanford Facility and off the Hanford Facility would be eligible for delisting. EPA makes no mention of offsite waste in the proposed rule. EPA needs to clarify in the final rule that the sources eligible for delisting include offsite waste sources. Secondly, DOE stated in Section 2.2 of the delisting petition that LERF/ETF can receive dangerous, low-level, and mixed wastewaters. EPA on page 42396 left column, only mentions mixed waste. EPA needs to clarify that ETF/LERF can also delist other non-radiological

"hazardous" waste sources (it would inappropriate for DOE to request EPA address "dangerous" waste sources since this is a term used by the State of Washington in their regulations). Third, DOE identifies 10 bullets of other hazardous wastewaters in Section 3.3 of the delisting petition. EPA does not mention all 10 of these sources in the preamble and a subset of these are sparsely mentioned in various sections of the preamble (for example "spill cleanup or decontamination" is mentioned on page 42396). In addition, EPA's language on page 42398, middle column describing Section 3.0 of the delisting petition, does not match up with the information contained in Section 3.3 of the delisting petition nor does it exactly match with the 3rd bullet in Section 3.0 of the delisting petition. These discrepancies need to be corrected. DOE encourages EPA to avoid any issues regarding waste sources in the final rule as this has been subject to interpretation in the past. As a suggestion, EPA could repeat the opening two sentences of section III.B. of the preamble language in the appropriate locations of the preamble to reference the reader back to the waste sources described in the delisting petition.

Response:

Comments noted. Since EPA is not republishing the proposed rule preamble, EPA is providing brief clarifying comments in response to each of the points raised. EPA does not believe any of these points warrants modification of regulatory language itself.

DOE's first point reads "In the delisting petition in Sections 1.4 and 3.1, DOE mentioned that waste generated both on the Hanford Facility and off the Hanford Facility would be eligible for delisting. EPA makes no mention of offsite waste in the proposed rule. EPA needs to clarify in the final rule that the sources eligible for delisting include offsite waste sources."

EPA acknowledges that the original source of wastes that ultimately result in wastewaters generated at Hanford then managed by the 200-Area ETF may originate from off-site. EPA's lack of explicit mention of on-site/off-site distinctions is simply a reflection that the various unit-specific waste acceptance criteria are sufficiently robust that explicit consideration of this issue is not needed in the 200-Area ETF exclusion rulemaking, and that the wastewaters themselves are generated on-site. EPA notes that consistent with 40 CFR 260.22, EPA can delist wastes only from a particular generating facility.

Secondly, DOE stated in Section 2.2 of the delisting petition that LERF/ETF can receive dangerous, low-level, and mixed wastewaters. Energy's specific comment reads "EPA on page 42396 left column, only mentions mixed waste. EPA needs to clarify that ETF/LERF can also delist other non-radiological 'hazardous' waste sources (it would inappropriate for DOE to request EPA address 'dangerous' waste sources since this is a term used by the State of Washington in their regulations)."

EPA agrees that a radiological component to wastes managed by the 200-Area ETF under this exclusion is not required – the exclusion is not intended to differentiate between mixed and non-mixed hazardous wastes. That said, EPA notes that it does not expect that 200-Area ETF treatment capacity will be routinely used to manage non-mixed wastes –

management of non-mixed wastewaters at ETF fully complying with exclusion conditions would be perfectly acceptable..

Third, DOE identifies 10 bullets of other hazardous wastewaters in Section 3.3 of the delisting petition. EPA does not mention all 10 of these sources in the preamble and a subset of these are sparsely mentioned in various sections of the preamble (for example "spill cleanup or decontamination" is mentioned on page 42396). In addition, EPA's language on page 42398, middle column describing Section 3.0 of the delisting petition, does not match up with the information contained in Section 3.3 of the delisting petition nor does it exactly match with the 3rd bullet in Section 3.0 of the delisting petition. These discrepancies need to be corrected."

Comment noted. EPA mention in the preamble of language appearing in Section 3.3 and 3.0 of the delisting petition was intended to be illustrative, not exclusionary. EPA did not intend to exclude other wastewater sources identified in the November 29, 2001 petition.

Finally, "DOE encourages EPA to avoid any issues regarding waste sources in the final rule as this has been subject to interpretation in the past. As a suggestion, EPA could repeat the opening two sentences of section III.B. of the preamble language in the appropriate locations of the preamble to reference the reader back to the waste sources described in the delisting petition."

Comment noted. The final rule language does not make reference to original waste sources, so this issue is moot.

Comment C: EPA does not discuss "concentrated waste" in the proposed rule where DOE spent considerable time at EPA's request to include the concentrated waste in the revised delisting petition submitted in November 2001.

DOE submitted DOE/RL-96-62 Revision 1 on November 2001 in part due to EPA comments that DOE should include the concentrated waste as part of the delisting petition in addition to the treated effluent. DOE has been led to believe from EPA that the concentrated waste was eligible for delisting in the federal program. DOE would like EPA to clarify the rationale for not including the concentrated waste in the proposed rule and comment on potential further delisting modification opportunities concerning the concentrated waste.

Response:

Comment noted, and EPA acknowledges that from a federal RCRA perspective, certain concentrated wastes may be viable candidates for exclusion. The rational for not promulgating a concentrated waste exclusion at this time relates to issues raised by the Washington State Department of Ecology (Ecology) with regard to state requirements applicable to Energy's request. EPA and Ecology are still considering options that would be consistent with both state and federal exclusion requirements. Therefore, the proposed exclusion rule is silent on DOE's request to exclude concentrated waste. EPA simply has not taken any action on DOE's petition to exclude certain concentrated wastes, and has not included information documenting its decision not to propose a concentrated waste exclusion in the treated effluent administrative record. At such time as Ecology may be willing to accept exclusion of concentrated wastes as a matter of state law, EPA will be willing to propose a federal exclusion rule.

Comment D: EPA should clarify that Hanford's stored waste in the Central Waste Complex (CWC) and elsewhere at Hanford is being disposed in locations other than the Low Level Burial Grounds.

On page 42398 middle column, EPA states: "*Wastes bearing these waste numbers are intended for future disposal in the mixed waste landfill (Low-Level Burial Grounds (LLBG)).*" A recently issued Action Memorandum is allowing waste stored in the CWC to be disposed at Hanford's Environmental Restoration Disposal Facility. DOE is also constructing a new landfill called the Integrated Disposal Facility which will also be used for disposal of Hanford's stored waste after the LLBG waste trenches are filled to capacity.

Response:

Comment noted. Language in the preamble was written prior to the cited Action Memorandum, and formalization of the Integrated Disposal Facility. While the comment is factually correct, it is not significant in terms of proposed or final exclusion regulatory language.

Comment E: EPA needs to amend the statement regarding discarded chemical products.

On page 42398 right column, EPA states: "*The DOE–RL is not proposing to manage the discarded commercial chemical products in the 200 Area ETF, but only wastewaters from spill cleanup or equipment decontamination.*" Based on DOE's bullets four through six in Section 3.3 of the delisting petition, these wastes are being proposed and can be, or can contain, discarded chemical products bearing a U/P code. These three bullets are:

- unused wastewater samples;
- analytical wastewater resulting from sample analysis, and the most likely one;
- laboratory reagents and standards.

Many laboratory reagents and standards are considered discarded chemical products. DOE agrees with the condition's technical aspects to assure wastewaters bearing U/P codes are properly managed.

Response:

Comment noted. EPA does note, however, that discarded laboratory reagents and standards bearing U/P waste numbers that are NOT wastewaters are excluded from management at the 200-Area ETF under the final exclusion.

Comment F: EPA should revise how they are addressing the Waste Treatment Plant waste source.

DOE considers the Waste Treatment Plant to be just like any other waste stream for the purpose of enforcing the delisting petition. EPA has all the controls it needs in the delisting petition conditions, as proposed by DOE, to address new waste streams that have not been generated. There are other waste streams evaluated and considered under the proposed delisting besides the Waste Treatment Plant where the waste stream has not been generated. This is why an "upfront" delisting was selected in the first place for the ETF (footnote 7 on page 42401) and continues to be used in this modification. DOE's proposed changes to the conditions in the first part of this comment package reflect the position described in this comment. DOE is confident that there is a way to structure this delisting petition final rule so that EPA has the assurances proper treatment will be performed and at the same time give DOE the assurance the delisting petition will not need to be modified in the near future for this anticipated waste stream. DOE would like to discuss this aspect with EPA in order to avoid, if possible, another costly delisting petition modification.

Response:

Comment noted and agreed with. EPA agrees that it is likely that WTP liquid effluent[2] will be managed by the 200-Area ETF just like any other waste stream for purposes of enforcing the delisting petition. In fact, a careful reading of EPA's language shows that EPA is not imposing any expectations on WTP liquid effluent that differ from any new waste stream that may be managed under this final exclusion. EPA's intent in including an explicit discussion of WTP liquid effluents is that it is likely to be the single most significant waste stream not currently managed by the 200-Area ETF. As such, an explicit acknowledgement was warranted.

Comment G: EPA needs to change the way land disposal restrictions (LDRs) are described in the preamble language to the treated effluent.

DOE is concerned that EPA is placing additional, unnecessary LDR requirements upon the treatment effluents. Page 42408, Section III.N, contains the following text concerning LDRs: *"Relationship Between Today's Proposed Action and Compliance LDR Treatment Standards: Today's action proposes to exclude certain wastes from the definition of hazardous waste under the authority of 40 CFR 260.20 and 260.22. EPA is*

[2] Waste Treatment Plant effluents are briefly described in Section 3.2 of the November29, 2001 200 Area ETF delisting petition.

not proposing any action that establishes or imposes treatment requirements under the authority of land disposal restriction rules appearing at 40 CFR part 268, nor is EPA proposing that the numerical delisting criteria in today's proposal necessarily satisfy existing LDR treatment standards that may be applicable to treated effluents. In general, all of the influent wastewaters considered in today's proposal are expected to be generated and actively managed prior to the point of exclusion, should today's proposal be finalized. As such, EPA believes that the treated effluent in question are prohibited wastes and subject to applicable LDR treatment requirements prior to land disposal at the SALDS. For disposal at SALDS, applicable LDR prohibitions and treatment requirements are specified by WAC 173–303–140, which incorporates by reference 40 CFR part 268." On the other hand, right before this text in III.M, EPA makes a statement more consistent with DOE's understanding of how LDRs apply to the delisting action: "*If we finalize this proposed exclusion, EPA no longer will regulate the petitioned waste as a listed hazardous waste under 40 CFR parts 262 through **268** and the permitting standards of part 270*." [emphasis added]. DOE agrees with EPA's text that states: *"…influent wastewaters considered in today's proposal are expected to be generated and actively managed prior to the point of exclusion…"* because the waste sources are generated, treated in the ETF, and then a point of generation occurs after the last unit operations on the ETF treatment train, storage of the treatment residue occurs after the point of generation, and then the treated effluent is delisted in the verification tanks, the point of exclusion. DOE also acknowledges how EPA could arrive at a tentative conclusion described in III.N of the preamble based on the recently issued guidance from January 2004, RCRA, SUPERFUND & EPCRA CALL CENTER MONTHLY REPORT, titled "*Application of LDR to Delisted Wastes.* DOE would like however to request that EPA reconsider the status of LDRs to the delisted treated effluent, and conclude that the LDRs have been met and no further sampling is necessary to confirm LDR treatment standards have been met because: (1) The delisting petition is an upfront delisting that looks at wastewaters before they are generated, and (2) the ETF treated effluent is not subject to underlying hazardous constituent (UHC) treatment requirements based on the waste analysis plan in the Hanford Facility RCRA Permit which states: *"The generator is also responsible for identifying Land Disposal Restrictions (LDRs) that would be applicable to the influent aqueous waste as part of the characterization, as require under 40 CFR 268.40 and WAC 173-303-140. **Because ETF is a Clean Water Act - equivalent TSD unit** (40 CFR 268.37(a)), the generator is not required to identify the underlying hazardous constituents (40 CFR 286.48)"* [emphasis added]. DOE's proposal that the LDR requirements of 40 CFR 268 should be met in the treated effluent is based on the relationship established by EPA between RCRA and the Clean Water Act, and how history by which EPA arrived at the clean water act equivalent language found in 40 CFR 268.37(a). DOE is not trying to persuade EPA disposal is not occurring, because it clearly is. The treated effluent is being disposed to the soil column at Hanford. DOE is placing emphasis on the ETF unit operations and the robust nature of the treatment activities and how this fact relates to the clean water act equivalent concept.

The LDR requirements have been handled independently from the delisting petition in the past and should remain that way, however if the appropriate resolution can be

obtained prior to the final rule, DOE encourages EPA to publish relevant information in the final rule.

Lastly, in order to say that the LDRs have been met in the treated effluent, there appears to be a discrepancy between the delisting levels and LDR treatment standards, which makes sense given the historical independent application of the delisting petition and LDR issues. If necessary, DOE can compare the delisting levels in condition (5) to the LDR treatment standards in 40 CR 268.40, however it is known that Acetone's delisting level of 2.4 mg/L exceeds the LDR level for wastewaters under F001-F005 at 0.28 mg/L.

If EPA is not persuaded by the two points raised above, DOE is requesting that this topic is discussed prior to issuing the final rule to determine how to address LDRs of the treatment effluent. Discussions with Ecology will be required, because the outcome will require a permit modification to the ETF waste analysis plan.

Response:

Comment noted. EPA believes several clarifications and corrections to this comment are appropriate, however. First, EPA notes that the treated effluent exclusion rulemaking does not impose or alter any LDR requirements. Comments in the preamble are intended merely to articulate the relationship from the federal perspective of LDRs and the exclusion rulemaking. Specific implementation of the LDR program applicable to treated effluents is subject to jurisdiction of the Washington State Department of Ecology under their authorized dangerous waste program.

Second, a clarification is appropriate to the statement quoted from Section III.M. "*If we finalize this proposed exclusion, EPA no longer will regulate the petitioned waste as a listed hazardous waste under 40 CFR parts 262 through **268** and the permitting standards of part 270*." This statement is true for any wastes whose initial point of generation for LDR purposes is the point of exclusion under this delisting rulemaking. In practice, this statement is not true, since for treated effluents, there is no new point of generation for purposes of LDRs at the point of exclusion – the reason is such a new point of generation is generally defined by a change in treatability group, such as from wastewater to non-wastewater. In the case of the 200-Area ETF, all wastes are wastewaters both before and after the 200-Area ETF, so there is no change in treatability group. Therefore, any LDR treatment requirements that attached to wastes prior to management in the 200-Area ETF continue to apply after the point of exclusion. See also "APPLICATION OF LDR TO DELISTED WASTES," 01/01/2004, RCRA Online Number 14699, available at http://www.epa.gov/rcraonline.

This comment makes several other statements that require clarification. First, the comment states "The delisting petition is an upfront delisting that looks at wastewaters before they are generated." This is factually incorrect – all wastewaters considered for exclusion under this rulemaking are generated prior to reaching the point in the treatment/management sequence of events where this delisting exclusion applies. The temporal relationship between generation and exclusion in this instance must be viewed

in the context of the process flow of the waste treatment process, not the temporal relationship between point of generation and administrative promulgation of this exclusion. To do otherwise, as Energy does in its comment, is simply mixing apples and oranges. The fact that EPA is promulgating an up-front exclusion prior to the point in time that a particular waste is generated is irrelevant, since the rulemaking action is not excluding wastes at their original point of generation.

Second, DOE appears to incorrectly interpret the provisions of 40 CFR 268.37(a) and 40 CFR 268.1(c)(4). The provisions of 268.37(a) apply only to wastes that designate solely as D001 or D002. Wastes managed by the 200-Area ETF, however, carry listed hazardous waste numbers other than (or potentially in addition to) the D001 and D002 characteristic numbers – hence the need for an exclusion in the first place. So, 40 CFR 268.37(a) does not apply as interpreted by DOE in this comment, and Energy's comment is moot. Similarly, the provisions of 40 CFR 268.1(c)(4) do not apply, since this provision applies to wastes that are hazardous only because the exhibit a hazardous characteristic. Again, any wastes managed under this exclusion by definition carry listed waste numbers in addition to any characteristic codes that might apply. So, 40 CFR 268.1(c)(4) does not apply either.

Finally, DOE's comment notes "Lastly, in order to say that the LDRs have been met in the treated effluent, there appears to be a discrepancy between the delisting levels and LDR treatment standards, which makes sense given the historical independent application of the delisting petition and LDR issues. If necessary, DOE can compare the delisting levels in condition (5) to the LDR treatment standards in 40 CR 268.40, however it is known that Acetone's delisting level of 2.4 mg/L exceeds the LDR level for wastewaters under F001-F005 at 0.28 mg/L." DOE's observations are correct – this is because delisting exclusion limits are established on a risk basis, while LDR treatment standards are established on the basis of treatment technology performance. In the cited case of acetone, treatment afforded by best demonstrated available technology is superior to that required by health- or risk-based limits. As a result, attempting to establish a correlation, particularly for purposes of demonstrating compliance with LDR treatment standards, between delisting exclusion limits and LDR treatment requirements would be inappropriate.

Other Comments

The following comments were received from an individual commenter after the close of the public comment period. EPA is under no obligation to respond to late comments, but has elected to respond to comments one commentor.

Comment 1: General Comment: The proposed modification does not contain schematics and process description for ETF storage areas and unit operations as recommended by EPA RCRA Delisting Program Guidance Manual for the Petitioner. Assuming this information is provided in the original delisting petition, the reader should be directed to the appropriate reference(s) (presumably, DOE/RL-98-72). Otherwise, the petition modification should provide sufficient information to independently assess the

capability of ETF to consistently produce effluent that meets delisting criteria. Many other elements of the "EPA RCRA Delisting Program Guidance Manual for the Petitioner" are not explicitly addressed; the appropriate references should be cited, at a minimum. Although this is not a critical flaw in the proposed modification, without public access to information recommended by EPA guidance documents, independent assessment of ETF's proposal is difficult.

Response:

Comment noted. EPA included a number of documents in the rulemaking docket, specifically including the original 200-Area ETF delisting petition, DOE-RL-92-72, Revision 1. The November 29, 2001 delisting petition and the docket record address the points raised by this comment. No changes are required to address this comment.

Comment 2: Section 3.2, page 3-3, lines 22-25, and Section 4.2 in its entirety: The text indicates the proposed delisting modification will include powders and evaporator brine. From Section 2.1, page 2-2, line 28 clearly identifies these waste streams as the result of the secondary waste treatment system. Section 1.4 indicates the proposed delisting modification is for treated effluent resulting from treatment in the primary effluent treatment system. The delisting modification needs to clearly delineate which effluent streams are subject to the proposed delisting modification. Figure 2-1, page F2-1, should also indicated the stream that is subject to the proposed delisting modification (also see Item 8 of Part 3: Delisting Process Information, Contributing Manufacturing Processes" from Appendix A, "Framework For Delisting Petitions," from the EPA guidance document, "EPA RCRA Delisting Program Guidance Manual for the Petitioner"). Please clarify the scope of the petition in Section 1.4.

Response:

Comment noted. EPA interprets this comment as applying to the delisting petition authored by Energy (DOE/RL-98-72), not the proposed rulemaking itself. The final language is specific to "treated effluent," as its application at the point of discharge from the 200-Area ETF verification discharge tanks. This language is explicit that the exclusion applies to treated effluent, not evaporator brine or concentrated wastes. As discussed in the response to preamble comment C from the Department of Energy. No change is required to address this comment.

Comment 3: Section 4.1.2.1, page 4-2, lines 31-32: The text indicates that sulfide, thallium, osmium, cobalt and tin are new constituents of concern to be added to the ETF delisting by the proposed modification. What is the basis for regulation of osmium, cobalt and tin? They do not appear in Table B-1, and should be excluded if there's no basis for regulation.

Response:

EPA has not established exclusion limits for osmium, cobalt or tin, so this comment is moot. No changes are required.

Comment 4: Section 4.1.2.2, page 4-3, lines 11-16, and Table 4.1, and Appendix B constituent, and Appendix C: The proposed treatment envelopes and acceptance criteria need to be compared to projected WTP effluent constituent levels and volumes to ensure waste acceptance criteria (and delisting criteria, by association) are not exceeded when WTP begins sending its effluent to ETF. No data are provided to indicate the results of such an evaluation, and thus there's no indication as to whether or not accepting WTP effluents will impact ETF's ability to adhere to petition conditions. DOE-ORP should be consulted for information concerning volume and composition estimates for WPT effluents.

Response:

Comment noted. EPA agrees with the principles expressed in this comment, and has specifically considered them in the discussion concerning the Hanford Waste Treatment Plant (WTP) in Section III.A of the proposed rule preamble. As discussed in response to regulatory language comment 1 from the Department of Energy, EPA explicitly acknowledges that data specific to WTP effluents were neither available (at least in other than very preliminary form) nor considered by EPA in development of the proposed rule. For this reason, EPA proposed the engineering evaluation process and associated exclusion conditions in anticipation that waste streams such as WTP effluent may eventually be managed by the 200-Area ETF for which characterization data and treatment performance data are not currently available.

Comment 5: Section 4.2, page 3-4, lines 4-12: Indicate whether brine characterization data are available for use with DRAS, and if so, provide such data to facilitate independent evaluation of proposed delisting levels that might be established in the final ruling.

Response:

As noted in response to preamble language comment 7 from the Department of Energy, EPA is not proposing a delisting exclusion applicable to concentrated waste (evaporator brine) at this time. This comment is not applicable to the proposed treated effluent proposal. At such time as EPA may proposes a rule applicable to concentrated waste, the issue raised by this comment will be appropriately considered. No change is required to address this comment.

Comment 6: Section 5.0, page 5-1, lines 40-41, and page 5-2, line 8-10. The ETF should be permitted to use alternate EPA or ASTM approved analytical techniques as long as detection limits support decisions regarding meeting delisting limits, and as long as the precision, accuracy and calibration verification protocols of the methods(s) are comparable to SW-846 counterparts. Specifying MDLs that are the same or lowed that [sic] comparable SW-846 methods could be overly conservative in those cases where

delisting limits are well above SW-846 method MDLs. Such sensitivity may not be warranted and may be unnecessarily burdensome.

Response:

Comment noted. This comment focuses on issues largely consistent with EPA's Performance Based Measurement System (PBMS) activities, summarized at http://www.epa.gov/SW-846/pbms.htm, with more particulars found in the October 6, 1997 PBMS Federal Register notice, found at http://www.epa.gov/fedrgstr/EPA-WASTE/1997/October/Day-06/f26443.htm. In establishing the requirements for analytical testing to demonstrate compliance with delisting exclusion limits, EPA has anticipated this question and the objectives of PBMS by adding the option "or other EPA-approved methodologies." See Condition 2(a) of the proposed exclusion rule. No changes are required to address this comment. See also language in the Section IV.I of the proposed exclusion concerning compliance with the National Technology Transfer and Advancement Act (NTTAA).

Comment 7: Table A-1. The table should indicate whether the column "Pilot Plant Predicted Treatment Efficiency" is the maximum or average predicted treatment efficiency, and the data in the column for the historic ETF treatment facility should be the equivalent. Otherwise, the qualitative statements in Section 4.1, page 4-1, lines 37-41 cannot be verified.

Response:

Section 3.0 of Appendix D, "200-Area Effluent Treatment Facility Envelope Test Report – Operating Envelope" from the original 200-Area ETF delisting petition DOE/RL-92-71, Rev. 1, 8/30/93, states:

> "The inorganic constituent removal efficiencies expected in the ETF are based on removal of inorganic constituents by the RO and IX process steps. The inorganic constituent removal efficiencies determined through pilot plant testing are shown in Table 3-1 for each surrogate solution tested. The majority of the removal efficiencies are shown with a greater than symbol, because the removal efficiency was based on a IX discharge sample result reported below the detection level. In some cases, the RO process removed an inorganic constituent to below the detection limit so the following IC process essentially had nothing to remove and the operating envelope for inorganic constituents is then very conservative. Based on the discussion in Section 2.1, the removal efficiencies used to determine the operating envelope are, in most cases, averages from two or more tests. …."

Footnote 5 to Table A-1 states "The historical ETF treatment efficiency is the maximum of the treatment efficiencies for the three waste streams shown." While the bases of the last two columns of Table A-1 differ, this difference is not sufficient to alter EPA's finding with the cited qualitative statement. This comment does raise a valid concern, however, that use of the maximum treatment efficiencies from historical inorganic data in

Table A-1 as the basis for calculating treatability envelopes in Table C-2 may not be representative of actual 200-Area ETF performance.

Arsenic provides an example of this concern. Table A-1 reports the historic ETF treatment efficiency for arsenic as 100%. Table C-1 bases the treatability envelope for arsenic on a removal efficiency of 99.9%, consistent with footnote 2 to Table C-1. Arsenic data in Table A-1 specific to Operable Unit UP-1 Groundwater, however, results in a historic treatment efficiency of 92.7% [(2.6 µg/l - .19µg/l) / 2.6 µg/l]. While this historic treatment efficiency still represents substantial and effective removal of arsenic (indeed, data for 242-A process condensate and LERF Basin 44 reflect even better performance), it does differ significantly from the 99.9% removal efficiency used in Table C-1. Therefore, where historic ETF treatment efficiency data for inorganics from Table A-1 are used to calculate treatability envelopes for purpose of condition (1)(a)(i) in the exclusion rule, EPA is requiring use of the historic treatment efficiency specific to a particular influent waste stream (e.g., 242-A process condensate, UP-1 groundwater or LERF basin 44 liquids) for waste processing strategies specific to such waste streams. For waste processing strategies for other influent waste streams, the minimum historic ETF treatment efficiency must be used.

EPA recognizes that future treatment experience for both waste streams evaluated in Table A-1 and future waste streams that may be managed by the 200-Area ETF may document more refined treatment efficiency data. Therefore, EPA is including a provision allowing Energy to establish alternate inorganic removal efficiencies for purposes of condition (1)(a)(i) through submission of an engineering report to EPA. The engineering report must be based on at least four influent waste stream characterization and four treated effluent verification sample data points for wastes managed under a particular waste processing strategy. Treatment efficiencies must be calculated based on a comparison of upper 95 percent confidence level constituent concentrations. Upon written EPA approval of the engineering report, the associated inorganic treatment efficiency data may be used in lieu of those in Table C-1 for purposes of condition (1)(a)(i).

This document addresses pilot plant predicted treatment efficiency based on pilot plant UV/OX process oxidation rate data. The historic ETF treatment efficiency data for organics in Table A-1 is presented for comparison purposes only – these data are not used for establishing 200-Area ETF treatability envelopes in Table C-2 and referenced by condition (1)(a)(i) of the proposed exclusion. Instead, as described in Section 4.1.2 of the November 29, 2001 delisting petition, treatability envelopes in the proposed rule are based on vendor-supplied EE/O (Electrical Energy per Order), specific to the equipment at the 200-Area ETF. Therefore, this comment is not relevant to the specific rule proposal language with respect to organics, and no change is required.

Comment 8: Table D-1, and accompanying text in Section 4.2, page 4-5, lines 14-16: The petition needs to clarify how the minimum, maximum, mean, standard deviation, and confidence limits were computed, particularly in those cases where there were no

constituents detected. The petition needs to indicate the assumptions regarding the distribution of constituent concentrations when the confidence limit is provided.

Response:

This comment applies to concentrated waste (evaporator brine), so it is not relevant to the treated effluent proposal.

Additional Changes

Subsequent to proposal of the Hanford ETF delisting, EPA finalized its Methods Innovation Rule (MIR) [70 Federal Register (FR) 34538, June 14, 2005]. With respect to the ETF delisting rule, the MIR rule makes two significant changes. First, it deletes mandatory use of analytical methods in EPA's publication SW-846 except for those methods applied as method-defined parameters, including in delisting exclusions under 40 CFR 268.22. Second, it modified the original ETF delisting rule (60 FR 6054, February 1, 1995) to remove references to SW-846 analytical methods, except for those methods applied as method-defined parameters

The structure of the final ETF delisting rule is such that it deletes the entire existing ETF delisting exclusion (including modifications made pursuant to the MIR rule) and replaces it with the entire modified delisting exclusion. Therefore, EPA believes it appropriate that the final ETF delisting exclusion rule reflect changes made via the MIR rule. EPA is including language in Condition 2 of the ETF delisting exclusion related to testing that is structured to allow the facility to select analytical methods on a method performance basis, consistent with the intent of the MIR rule. Since the MIR rule was promulgated just prior to finalization of the modified ETF delisting rule, information defining required analytical data quality and acceptance criteria was not included in DOE's delisting petition as anticipated by the MIR rule. Therefore, EPA is providing a conditional mechanism to develop, review and approve of the technical basis for defining "appropriate methods," without the lengthy delays that would be associated with revising the delisting petition at this late date. This approach will also result in a clear definition of compliance requirements with respect to analytical methods and verification sampling.

Particular changes to the ETF delisting condition 2 for purposes of conforming to the MIR rule were not included in EPA's delisting proposal, but are consistent with changes to Condition 2 contained in EPA's delisting proposal. In addition, the changes were shared with DOE. DOE's only comment was to ensure that compliance requirements were clearly specified between the effective date of the ETF delisting rule and EPA approval provided for in Condition 2. In response, EPA specified that continued use of methods consistent with criteria identified in the original delisting petition ("200 Area Effluent Treatment Facility Delisting Petition," DOE/RL-92-72, dated August, 1993), would be acceptable for purposes of demonstrating compliance with delisting exclusion limits. These methods are currently in use under the existing ETF delisting rule

For consistency with current Office of Federal Register (OFR) format for incorporation by reference, EPA is retaining language related to Method Defined Parameters (MDP) initially appearing in modifications to the ETF delisting promulgated by the MIR rule. EPA acknowledges that none of the analytical requirements associated with treated effluent verification would be related to MDPs. Similarly, it is not likely that any sampling and analysis which Energy may conduct pursuant to Conditions (1)(a)(i) and (1)(d)(ii) would relate to MDPs.